

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on July 28, 2006, and the references cited therewith.

Claims 1-29 are now pending in this application.

§ 103 Rejection of the Claims

The rejection of Claims 1-3, 5-10, 13-25, 27, 29 under 35 USC § 103(a) as being unpatentable over Rostoker et al. (U.S. 6,470,482, hereinafter "Rostoker") in view of Padwekar (U.S. 6,925,584, hereinafter "Padwekar") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claims 1-3, 5-10, 13-25, 27, and 29 are patentable over the cited references, taken separately or in combination.

Claim 1 recites a system in a computing device in which the system includes a modeling engine, a layout engine and a set of at least one interface. The modeling engine is for editing modeling elements. The modeling engine is connected to a user interface and operable to emulate an electronic system design having a plurality of electronic elements. The layout engine is connected to the modeling engine and configured to execute an automatic layout process that automatically lays out modeling elements of the emulated electronic system design. The set of at least one interface connects the modeling engine to the layout engine. The set includes at least one interface through which the modeling engine communicates with the layout engine to provide state-maintained user interaction with the automatic layout process other than to cancel the automatic layout process. The layout engine may interrupt the automatic layout process at a first operational point and resume from the first operational point. Claims 2, 3, 5-10 and 13 depend from Claim 1.

Claim 14 recites a computer-implemented method. A layout engine is started to lay out electronic model elements that are part of an emulated electronic system. Information from the layout engine is received indicating that it can be safely interrupted within a current state. The layout engine in the current state is interrupted based on the information, such that an automatic layout process may be interrupted at a first operational point and resume from the first operational point. Claims 15-18 depend from Claim 14.

Claim 19 recites a computer-implemented method. A layout engine is started to lay out electronic model elements that are part of an emulated electronic system. Information is provided to the layout engine by which the layout engine preserves state information. The layout engine is interrupted such that a layout process may be interrupted at a first operational point and resume from the first operational point. Information is provided to the layout engine by which the layout engine restores state from the state information. The layout engine is restored from the restored state. Claims 20-25, 27 and 29 depend from Claim 19.

The references of Rostoker and Padwekar, as discussed below, are cited as support for rejecting Claims 1-3, 5-10, 13-25, 27, and 29.

Regarding Claim 1, Applicant's Claim 1 is neither disclosed nor suggested by the references, taken separately or in combination, in that the references neither disclose nor suggest at least the features of *in a computing device, a system comprising: ... a set of at least one interface connecting the modeling engine to the layout engine, the set including at least one interface through which the modeling engine communicates with the layout engine to provide state-maintained user interaction with the automatic layout process other than to cancel the automatic layout process, wherein the layout engine may interrupt the automatic layout process at a first operational point and resume from the first operational point*, as set forth in Claim 1.

Rostoker discloses a system for interactive design, synthesis and simulation of an electronic system allowing a user to design a system either by specification of a behavioral model or by graphical entry. (See Abstract). Pages 2-3 of the Office Action state that Rostoker teaches all the elements of Claim 1 except that Rostoker does not teach *a set of at least one interface connecting the modeling engine to the layout engine, the set including at least one interface through which the modeling engine communicates with the layout engine to provide state-maintained user interaction with the automatic layout process other than to cancel the automatic layout process, wherein the layout engine may interrupt the automatic layout process at a first operational point and resume from the first operational point*, as set forth in Claim 1.

As support for the foregoing features of Claim 1 which the Office Action states are not disclosed in Rostoker, the Office Action on Page 3 relies on the reference of Padwekar.

Padewar relates to testing processors using a probe mode. (Col. 1, Lines 11-13; Col. 2, Lines 42-67). Col. 7, Lines 5-15 and Col. 3, Line 20-Col. 4, Line 65 of Padewar are cited as support for disclosing the foregoing features of Claim 1. Col. 7, Lines 5-15 of Padewar disclose a terminal access port 306 providing an interface between the testing device and the memory hierarchy, the processor and the storage unit. Padewar discloses that the terminal access port can be a serial interface or a universal serial bus (USB) interface. Col. 3, Line 20-Col. 4, Line 65 of Padewar disclose the operation of the processor in response to a probe mode break causing the processor to enter probe mode and original code in an instruction cache to be saved. Additionally, state information including the instruction pointer and register contents is saved to allow resuming normal execution after testing is complete. The probe mode handler is executed allowing access to architectural state information of the processor.

In connection with the foregoing portions of Padewar, Padewar discloses an interface between the testing device, the memory hierarchy, the processor and the storage unit, not an interface between a modeling engine and a layout engine. In fact, Padewar appears to have nothing to do with modeling or emulating an electronic system design, as in Applicant's claimed invention. Rather, Padewar, discloses testing hardware -- a processor -- using a probe mode. Padewar appears silent regarding a layout process, layout engine, or interrupting a layout process. In contrast, Padewar discloses interrupting execution of a processor using a probe mode pin or setting a breakpoint instruction. Padewar makes no mention of a layout engine causing an interrupt, and makes no mention of interrupting a layout process.

Applicant respectfully submits that the Office Action has set forth insufficient motivation as to why one skilled in the art would combine the references. Page 3 of the Office Action states that it would have been obvious to include Padewar's teaching with Rostoker's method in order to provide the user with the ability to pause and resume the entire process with the push of a button. The Office Action does not provide any suggestion or motivation in the prior art of record. The Office Action does not offer any other alternative motivation other than a broad statement that such a combination of the references is desirable. The reasoning set forth in the Office Action suggests impermissible hindsight motivation in that the outcome or combined results are desirable. Thus, the Office Action appears to conclude that the desirable outcome provides the needed motivation. Applicant respectfully submits that the broad statements

provided in the Office Action and/or the desirability of the result or outcome do not provide the motivation sufficient to support the obviousness rejection.

Applicant respectfully submits that one skilled in the art would not be so motivated to combine the references. Padewar relates to testing a processor and has nothing to do with modeling and a layout process that lays out modeling elements of an emulated electronic system design. Padewar discloses testing by actual execution, not emulation, of the processor hardware component being tested.

Furthermore, assuming for argument purposes only, that one skilled in the art would be so motivated to combine the references, for the reasons set forth above, the references still do not disclose or suggest at least the features of Claim 1 as pointed out above.

Accordingly, Claim 1, and claims that depend therefrom, are neither disclosed nor suggested by the references.

Claim 14 recites features similar to those pointed out above as included in Claim 1 which are neither disclosed nor suggested by the references. Claim 14 is neither disclosed nor suggested by the references in that the references neither disclose nor suggest, separately or in combination, at least the features of *receiving information from the layout engine indicating that it can be safely interrupted within a current state; and interrupting the layout engine in the current state based on the information, such that an automatic layout process may be interrupted at a first operational point and resume from the first operational point*, as set forth in Claim 14. Thus, Claim 14, and claims that depend therefrom, are patentable over the references for reasons similar to those set forth above regarding Claim 1.

Claim 19 recites features similar to those pointed out above as included in Claim 1 which are neither disclosed nor suggested by the references. Claim 19 is neither disclosed nor suggested by the references in that the references neither disclose nor suggest, separately or in combination, at least the features of *providing information to the layout engine by which the layout engine preserves state information; interrupting the layout engine, such that an layout process may be interrupted at a first operational point and resume from the first operational point; providing information to the layout engine by which the layout engine restores state from the state information; and restarting the layout engine from the restored state*, as set

forth in Claim 19. Thus, Claim 19, and claims that depend therefrom, are patentable over the references for at least reasons similar to those set forth above regarding Claim 1.

For at least these reasons, Applicant respectfully submits that Claims 1-3, 5-10, 13-25, 27, and 29 are patentable over the cited references.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of Claim 28 under 35 USC § 103(a) as being unpatentable over Rostoker in view of Padwekar and in view of Hurtado et al. (US 6,418,421, hereinafter "Hurtado") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claim 28 is neither disclosed nor suggested by the references, taken separately or in combination.

Claim 28 depends from independent Claim 19. For reasons set forth above, Claim 19, and Claim 28 that depends therefrom, are neither disclosed nor suggested by Rostoker and Padewar. For reasons set forth below, Applicant respectfully submits that combining Rostoker and Padewar with Hurtado also neither discloses nor suggests Claim 19, and Claim 28 that depends therefrom.

Hurtado is cited on page 9 of the Office Action as support for disclosing status information that includes data corresponding to time remaining to complete laying out the model elements. (Col. 56, Lines 20-35).

Features of Claim 19 which are neither disclosed nor suggested by Rostoker and Padwekar are pointed out above. Hurtado also appears silent regarding any disclosure or suggestion of the foregoing features. Thus, combining Rostoker and Padwekar with Hurtado does not overcome the deficiencies of Rostoker and Padwekar with respect to Applicant's Claim 19.

Furthermore, Applicant respectfully submits that one skilled in the art would not be motivated to combine Hurtado with Rostoker and Padwekar due to the diverse areas and different problems solved in each. Hurtado relates to digital rights management such as tracking usage of digital content on user devices. In contrast, Rostoker relates to interactive design and simulation of circuits and systems, and Padwekar relates to testing a processor.

For at least these reasons, Applicant respectfully submits that Claim 28 is patentable over the cited art.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of Claims 11 and 12 under 35 USC § 103(a) as being unpatentable over Rostoker in view of Padwekar and in view of Wittenburg et al. (US 6,515,656, hereinafter "Wittenburg") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claims 11 and 12 are patentable over the cited references, taken separately or in combination.

Claims 11 and 12 depend from independent Claim 1. For reasons set forth above, Claim 1, and Claims 11 and 12 that depend therefrom, are neither disclosed nor suggested by Rostoker and Padwekar. For reasons set forth below, further combining Rostoker and Padwekar with Wittenburg also neither discloses nor suggests Claim 1, and Claims 11 and 12 that depend therefrom.

Wittenburg is cited on page 9 of the Office Action as support for disclosing usage and implementation of pluggable software and a modeling engine that comprises a pluggable software component. (Col. 7, Lines 14-34).

Features of Claim 1 which are neither disclosed nor suggested by Rostoker and Padwekar are pointed out above. Wittenburg also appears silent regarding any disclosure or suggestion of these features. Thus, combining Rostoker and Padwekar with Wittenburg does not overcome the deficiencies of Rostoker and Padwekar with respect to Applicant's Claim 1.

Furthermore, Applicant respectfully submits that one skilled in the art would not be motivated to combine Wittenburg with Rostoker and Padwekar due to the diverse areas and different problems solved in each. Wittenburg relates to techniques for viewing information. (Col. 1, Lines 10-12). In contrast, Rostoker relates to interactive design and simulation of circuits and systems, and Padwekar relates to testing a processor.

For at least these reasons, Applicant respectfully submits that Claims 11 and 12 are patentable over the cited art.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of Claim 4 under 35 USC § 103(a) as being unpatentable over Rostoker in view of Padwekar and in view of Lyle (US 5,956,023, hereinafter "Lyle") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claim 4 is neither disclosed nor suggested by the references, taken separately or in combination.

Claim 4 depends from independent Claim 1. For reasons set forth above, Claim 1, and Claim 4 that depends therefrom, are neither disclosed nor suggested by Rostoker and Padwekar. For reasons set forth below, further combining Rostoker and Padwekar with Lyle also neither discloses nor suggests Claim 1, and Claim 4 that depends therefrom.

Lyle is cited on page 10 of the Office Action as support for disclosing a modeling engine that communicates with a layout engine to provide a progress indicator to the user. (Figure 11, item 78).

Features of Claim 1 which are neither disclosed nor suggested by Rostoker and Padwekar are pointed out above. Lyle also appears silent regarding any disclosure or suggestion of these features. Thus, combining Rostoker and Padwekar with Lyle does not overcome the deficiencies of Rostoker and Padwekar with respect to Applicant's Claim 1.

For at least these reasons, Applicant respectfully submits that Claim 4 is patentable over the cited references.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (425-707-9382) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 500463.

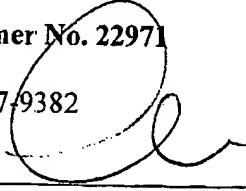
Respectfully submitted,

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Date 11/15/06

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